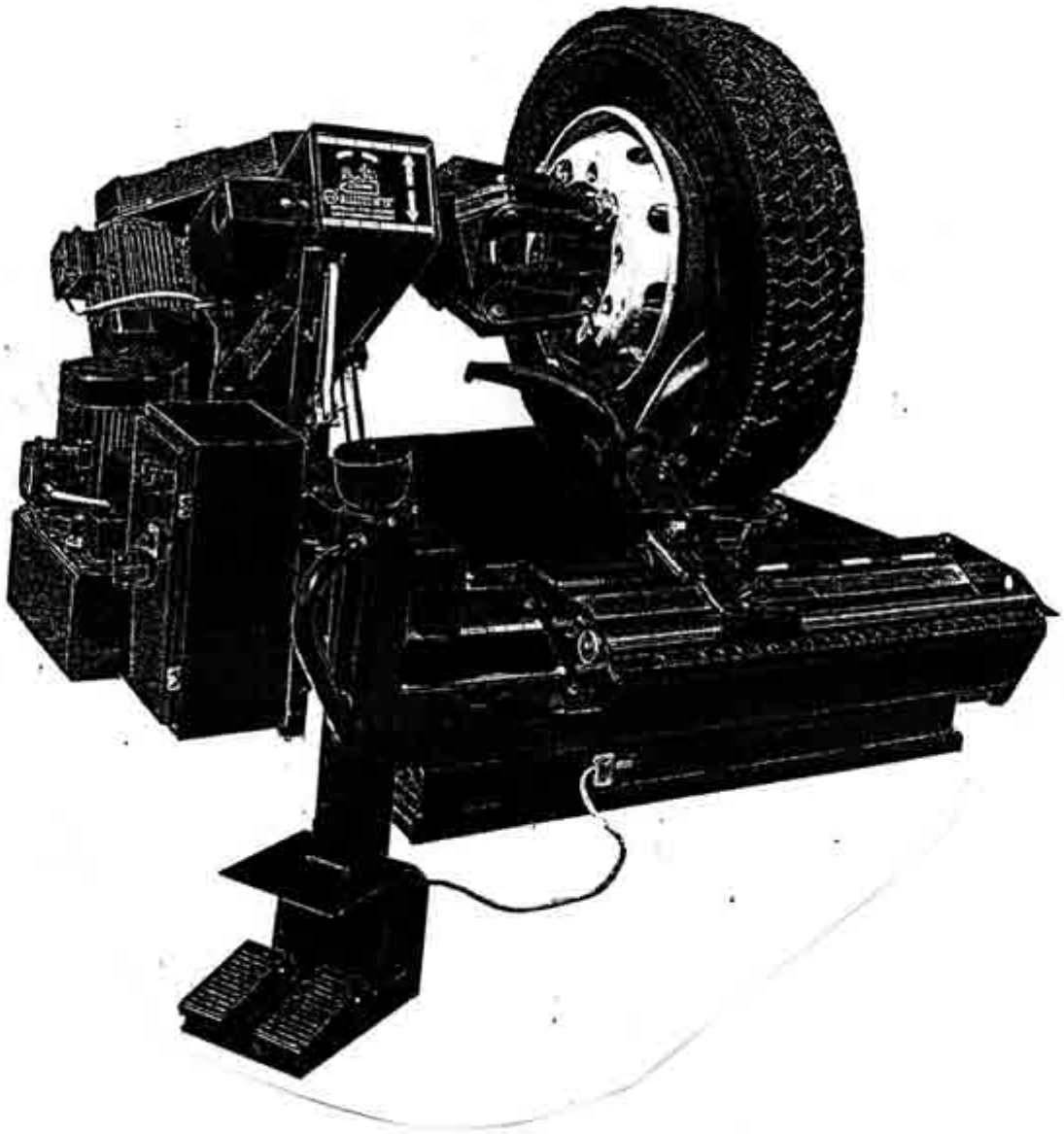
UNI – TROL Ltd
Production Plant & Sales Office
Estrady 56
01-932 Warsaw

OPERATING INSTRUCTIONS



ASSEMBLY MACHINE FOR LORRY WHEELS AT 14" – 26"

CONTENTS

- General conditions
- Technical characteristic
- Machine and its components
- Standard equipment, displacement, unpacking
- Electrical connection
- Disassembling and assembling of tubeless tyres and textile cord tyres
- Disassembling and assembling of wheel tyres for agricultural machines
- Servicing remarks
- Machine assembly drawings
- Machine part list
- Conformity declaration

ATTENTION!
MACHINE WITHOUT OIL

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Computer balancing machines
Wheel assembly machines
Elevators
Wheel assembly machines
Compressors
Automatic pumping devices
Vulcanizers
Vulcanizer tools
Workshop equipment

WARNING:

- This instruction manual is an integral part of the product. It is recommended to become familiar with all warnings and orders contained in it. This is important for the safe work and maintenance.
- This manual should be kept in a safe place so that you can use it in the future.

AT 14" – 26"

This machine was designed for the assembly and disassembly of lorry wheels and some delivery van wheels.
The machine is intended for the operation within the limits determined in this manual and according to the producer's recommendations. The machine has to be used within the range of operations for which it was designed. Other applications are incorrect and forbidden.
Producer and distributor bear no responsibility for possible losses resulting from any irregular, incorrect or forbidden operation.

IMPORTANT

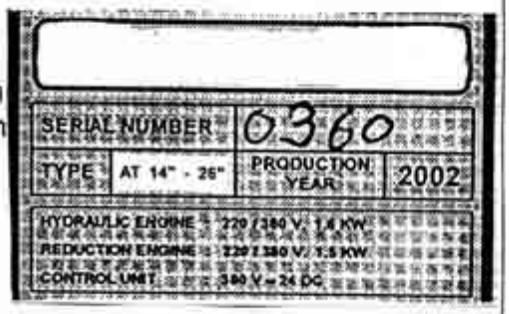
The machine can be operated only by properly trained personnel. All works involving electrical, hydraulic or pneumatic system elements must be carried out exclusively by qualified personnel.

TECHNICAL PARAMETERS

OVERALL DIMENSIONS:

- HEIGHT (MIN/MAX) 700 – 1160 mm
- DEPTH 1400 mm
- WIDTH (MIN/MAX) 1390 – 1800 mm

NET WEIGHT 530 KG



ENGINE DATA:

- REDUCER ENGINE - 3x380 V, 1.5 kW, 1400 rev/min
- PUMP ENGINE - 3x380 V, 1.5 kW, 1400 rev/min
- NOISE LEVEL - 75 dB A

APPLICATION RANGE

The assembly machine can operate with wheels having the following minimum and maximum parameters:

RIM DIAMETER	- 14" – 26"
MAX. WHEEL DIAMETER	- 1600 mm
MAX. WHEEL WIDTH	- 700 mm

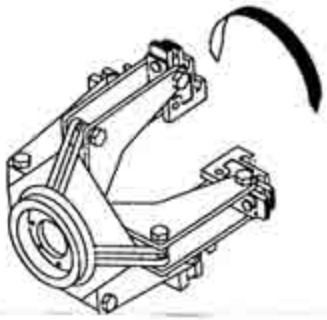
WARNING!

It is forbidden to pump the wheel until it iswas properly mounted on the assembly machine!
Particularly heavy wheels should be mounted on the assembly machine by two operators!

WHEEL CLAMPING SYSTEM

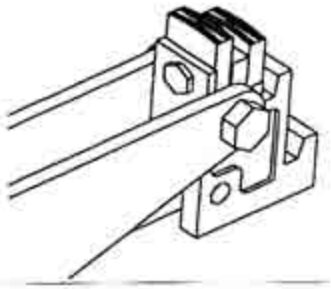
The machine self-centring chuck is operated by the high-pressure hydraulic system with working pressure from 2 to 11 MPa. During the rotation of the chuck the working pressure is indicated by the installed manometer. The standard working pressure amounts to 11 MPa, but for weaker or particularly thin rims it is recommended to limit this pressure.

PRINCIPAL COMPONENTS OF THE ASSEMBLY MACHINE

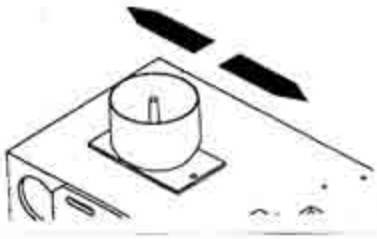


Drawing 1 Four-jaw universal chuck

The chuck rotates with two rotational speeds in both directions.
The chuck is hydraulically opened and closed.

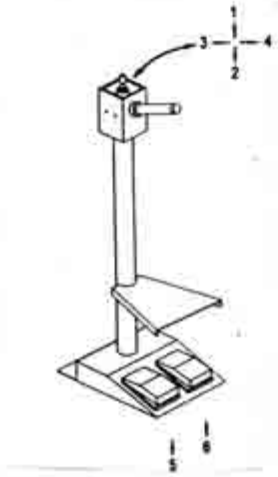


Drawing 2
Clamping jaw

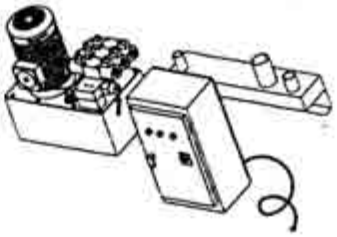


Drawing 3 Chuck arm control unit

Drawing 4 Assembly machine
AT 14" – 26"

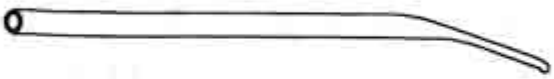


Drawing 5 **Portable control unit**
The controllers are connected
in the portable control unit



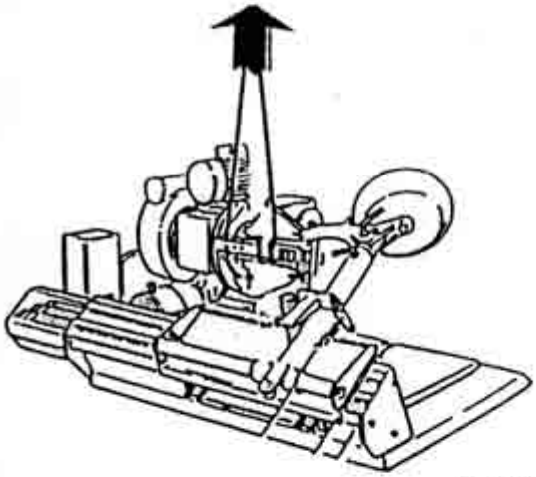
Drawing 6 **Hydraulic unit**
Through the working
pressure control
the unit allow to determine
safe operating conditions
for different alloy rims

Drawing 7 **Working arm**
Quick-rotation system of the tool
helps to change it quickly from disk to claw

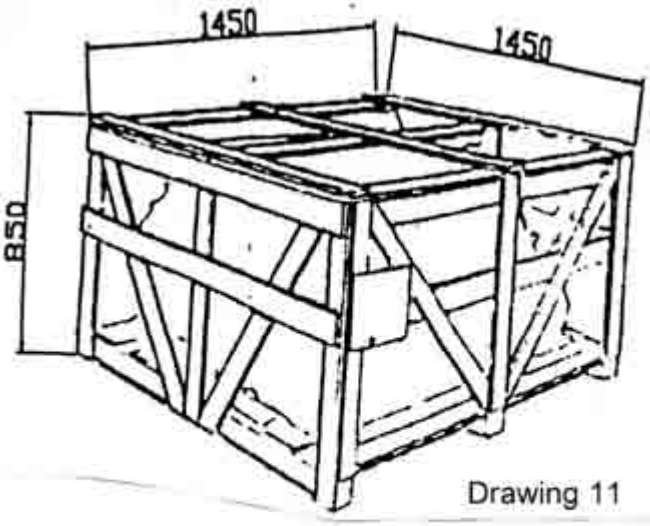


Drawing 8

Drawing 9



Drawing 10



Drawing 11

STANDARD EQUIPMENT

VULCANIZER SPOON (Drawing 8)

This tool is necessary to put the tyre edge on the working head during disassembly.

VULCANIZER CLAMP (Drawing 9)
It is used for the assembly of tubeless tyres and one-piece rims.

DISPLACEMENT (Drawing 10)

To install and correctly displace the machine you have to carry out the following actions:

- Place the rope harness (the first rope 1.5 m long and the second rope 2 m long) to the indicated points.
- Lift with an elevator to the appropriate height.

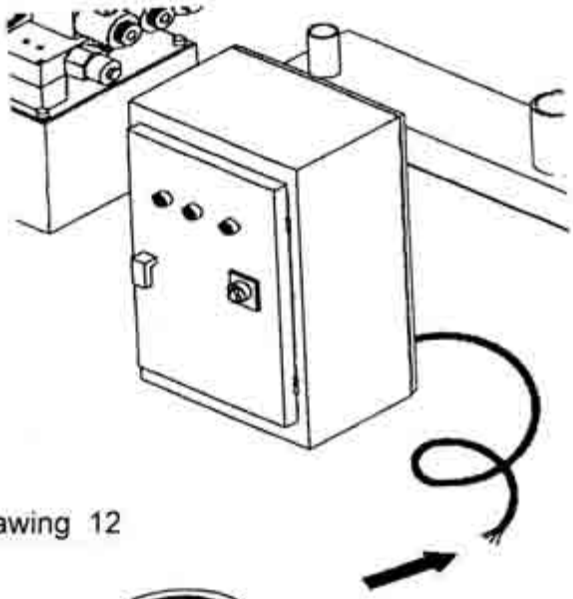
ATTENTION:
If it is necessary to displace the machine you have to take all precautions to ensure the required safety conditions.
Machine net weight: 530 kg

UNPACKING (Drawing 11)

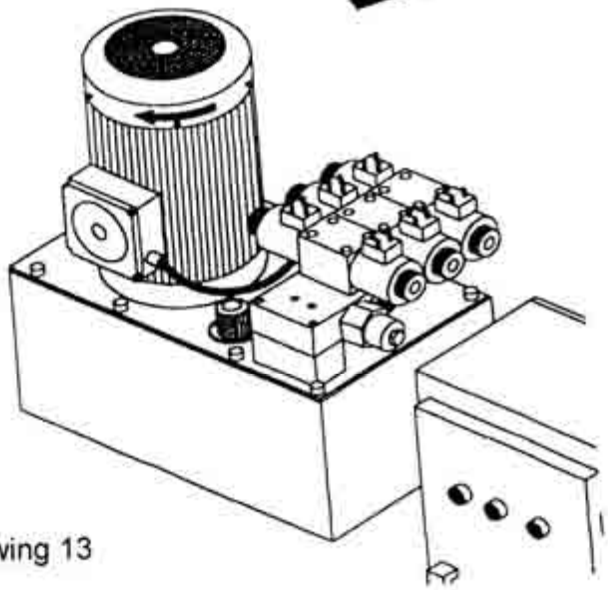
After the reception of the machine you have to take off its packaging and check visually if the machine is complete and without damage. If you have any doubts then you should not use the machine and inform about it the producer's or distributor's qualified personnel.

WARNING!

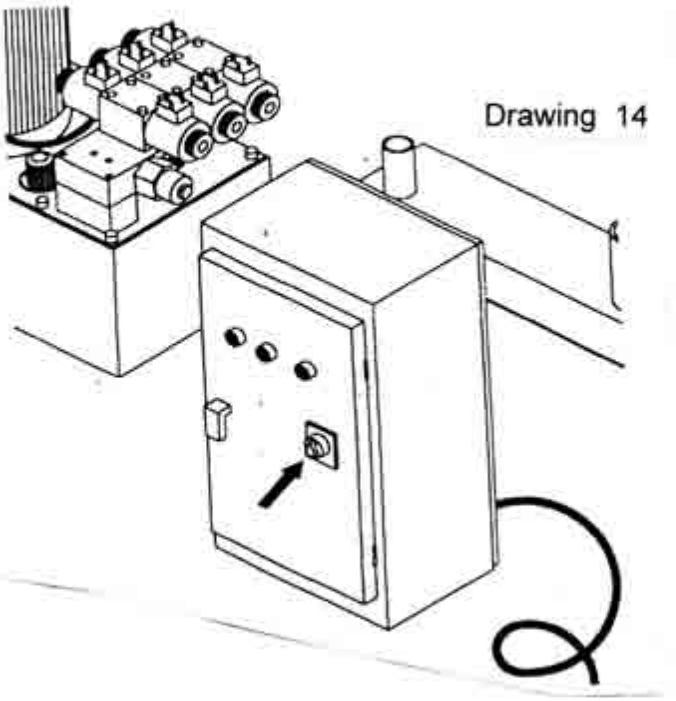
The packaging material should be removed beyond the reach of children because it is potentially dangerous.
The packaging material should be stored in an appropriately protected place if it might pollute the environment or is not biodegradable.



Drawing 12



Drawing 13



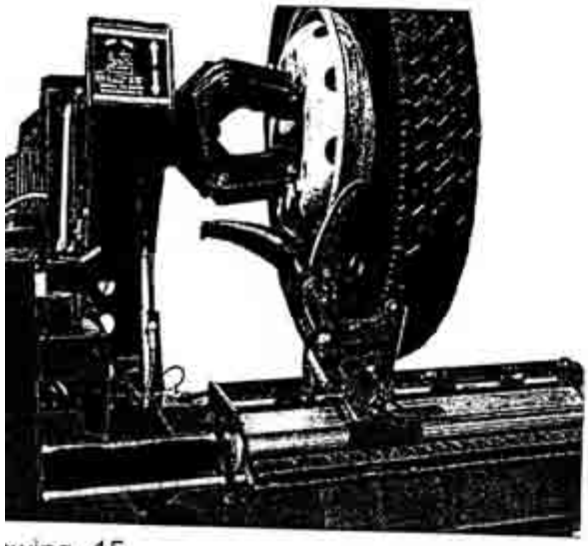
Drawing 14

ALL WORKS WITHIN THE ELECTRICAL SYSTEM OF THE MACHINE, INCLUDING THE FOLLOWING ONES, MUST BE CARRIED OUT BY PROFESSIONALLY QUALIFIED PERSONNEL.

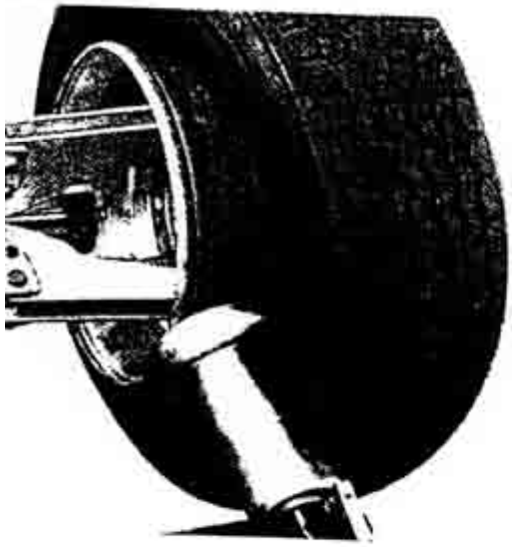
- Check if the main electrical supply cable corresponds to the voltage value indicated on the rating plate.
- Connect the supply cable to the plug according to European or domestic standards (Drawing 12). The yellow-green conductor in the supply cable is the protective conductor.
- Check the earthing efficiency.
- The machine must be connected to the supply network through a multipoint insulating circuit-breaker which is compatible with European standards and its open contact gap is not smaller than 3 mm.
- Check if the multipoint circuit-breaker is properly connected in the switchboard.
- After the connection of the machine you should momentarily turn on the main switch and check the correctness of engine rotations – should be compatible with the direction of the arrow indicated on the engine (Drawing 13).
- In the case when the engine rotations have the opposite direction you have to interchange two phase conductors in the supply plug.
- If the machine functions in an abnormal way then you should immediately turn off the main switch (Drawing 14) and find in the "SERVICING REMARKS" of this manual the description of such a case and the solution to it.

THE PRODUCER AND DISTRIBUTOR BEAR NO RESPONSIBILITY FOR ANY DAMAGE RESULTING FROM NON-OBSERVANCE OF THE ABOVE MENTIONED CONDITIONS.

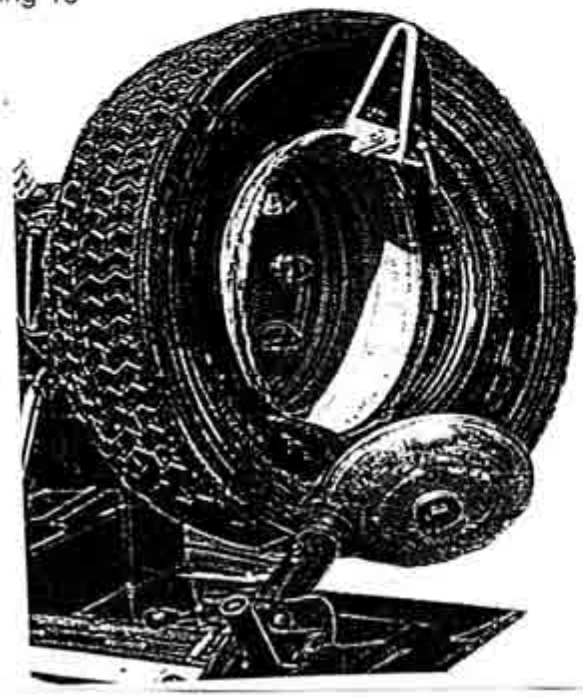
TUBELESS TYRE WHEELS AND BALLOON TYRES FOR CROSS-COUNTRY VEHICLES



awing 15



awing 16



DISASSEMBLY

Detach the tyre edge from the rim by means of the machine disk; lubricate the tyre and the rim edges with a suitable vulcanizer paste (Drawing 15). Repeat this operation on the other side of the wheel.

If it is the rim of a balloon tyre then you should continue the operation of tyre unsticking until it gets completely detached from the rim.

This operation is much easier if you use a special roll for tubeless tyres.

ATTENTION:

If we disassemble a very hard balloon tyre with textile cord or a tubeless tyre with a very large rim it is recommended to carry out this operation in the same way as for agricultural machines.

ATTENTION:

Tyre and rim edges should always be very well lubricated with a vulcanizer paste.

ASSEMBLY

In order to assemble the required tubeless tyre you have to place the tyre on the machine carriage, keeping it inclined. Next you have to slide it over the rim by means of a vulcanizer spoon and by pressing the tyre top slide it over the rim top.

If the above mentioned is not possible you have to use the vulcanizer clamp contained in a standard equipment (Drawing 17) and simultaneously slide both tyre edges over the rim. The assembly of the other side is similar.

ATTENTION:

For the assembly of a particularly hard balloon tyre with textile cord or a tubeless tyre with a very large rim it is recommended to carry out this operation in the same way as for agricultural machines.

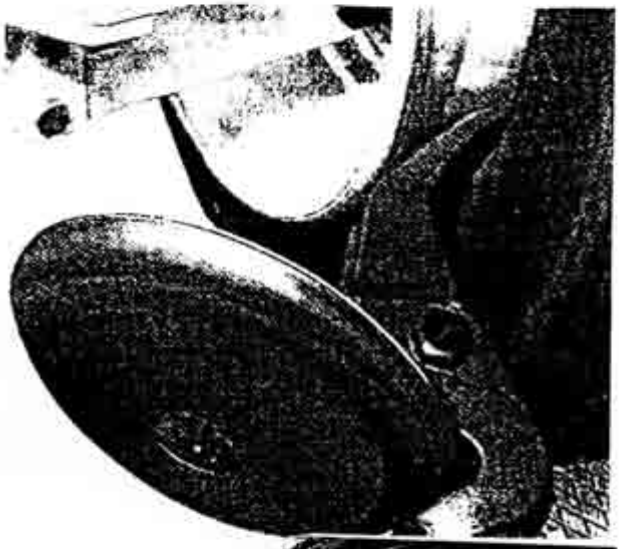
WARNING!

It is strictly forbidden to pump the wheel until it was properly mounted on the assembly machine!

Particularly heavy wheels should be mounted on the assembly machine by two operators!

WHEELS FOR AGRICULTURAL MACHINES

Drawing 18



Drawing 19

Drawing 20

DISASSEMBLY

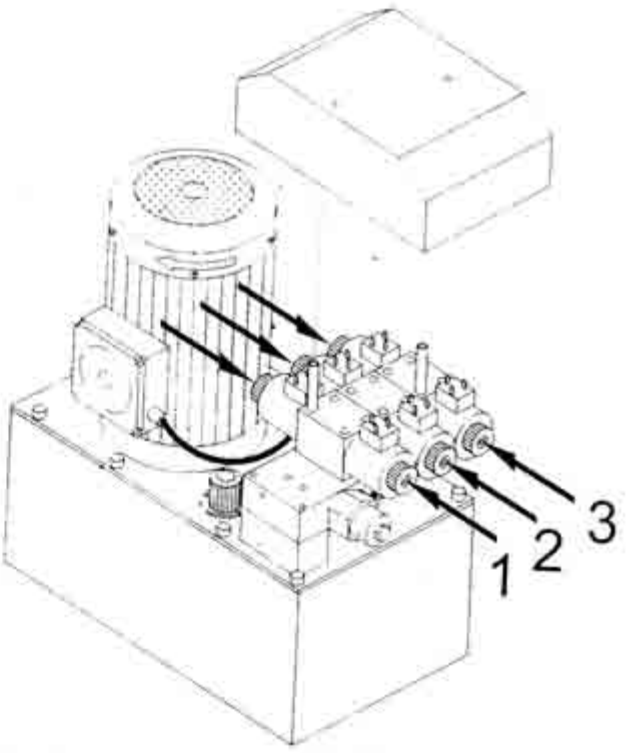
- Mount the wheel in the machine self-centring chuck and lift it until the rim touches the machine disk. After deflating the tyre start the process of unsticking the tyre from the rim by means of a portable control unit lever (Drawing 18 or Drawing 15). By using pedals and levers of the portable control unit shift the disk forwards and keep on turning the machine spindle.
- After lubricating tyre and rim edges with a special vulcanizer paste put the wheel into motion. After termination of the above operations withdraw the locking pin and turn the tool by 180 degrees. Repeat these operations for the other side of the tyre.
- Tilt the working arm and return the disk by pressing the pedal. By using the lever turn the working tool to its second position (to use claw) and fix the working tool to the carriage. Move the claw from the portable control unit to the tyre and insert it between the tyre edge and the rim until the tyre is hooked (Drawing 19 and 20). Stretch the tyre and move the wheel rim away from the tool until the tyre edge creates the channel between the tyre and the rim.
- Insert the vulcanizer spoon (Drawing 20/ Drawing 7) between the rim and the tyre over the claw so that the tyre edge remains hooked by the claw. Again put the rim into motion towards the tool and turn it until it slips off the tyre. Lean the wheel against the platform carriage in order to secure the working space necessary for easy inner tube removal.
- Disassembly of the other edge should be carried out after reversing the working tool by 180 degrees, inserting it (the claw) between the rim and the tyre edge (Drawing 19) and turning the machine spindle clockwise until the operation is finished.

ASSEMBLY

- In order to place the tyre on the rim you should first fix the vulcanizer clamp at the peak point of the rim (Drawing 17/ Drawing 8) and place the tool (the claw) between the tyre and the rim.
- Turn the machine spindle clockwise until the back edge of the tyre slides fully over the rim.
- Introduce the inner tube inside the tyre and by leaning the wheel against the platform carriage (Drawing 17) support this operation.
- Place the tool again in the neighbourhood of the wheel valve as it was done for the previous side of the tyre. Place the vulcanizer clamp to the left of the tool and

SERVICING REMARKS

PROBLEM	CAUSE	REMEDY
If you have a problem with the transmission during lifting or lowering of the chuck	Blocked pressure valve –Drawing 1/valve 1	After removal of the valve casing use a metal pin with the diameter max. 5 mm in order to unblock carefully the faulty valve
If you have a problem during chuck closing	Blocked pressure valve Drawing 1/valve 2	
If you have a problem during platform movement	Blocked pressure valve Drawing 1/valve 3	
Engine works but the chuck does not turn	Engine belt can be loose	Check the engine belt
Not sufficient pressure in the hydraulic part	Sense of rotation of the pump engine is reversed	Interchange two phase conductors of the engine
	Loss of oil	Find the place and fill it up with oil to the correct level
Machine chuck does not work	Chuck valve o-ring can be damaged	Exchange o-ring
	input o-ring can be damaged	Report the defect to the service
Chuck turns neither to the left nor to the right	Possible problem within the electrical system of the machine	Report the defect to the service
Transmission does not rise or lower		
Platform does not move		



Drawing 1 Indication of hydraulic valves

MAINTENANCE

All maintenance works should be carried out when the electrical supply is disconnected.

To ensure the durable and failure-free operation of the assembly machine for a long period of time you have to carry out systematically the following servicing works:

1. Lubricate periodically the following machine parts:

- mandrel joints;
- slideway of the tool platform;
- leading plate;
- servo-motor of the elevator
- machine chuck and its joints.

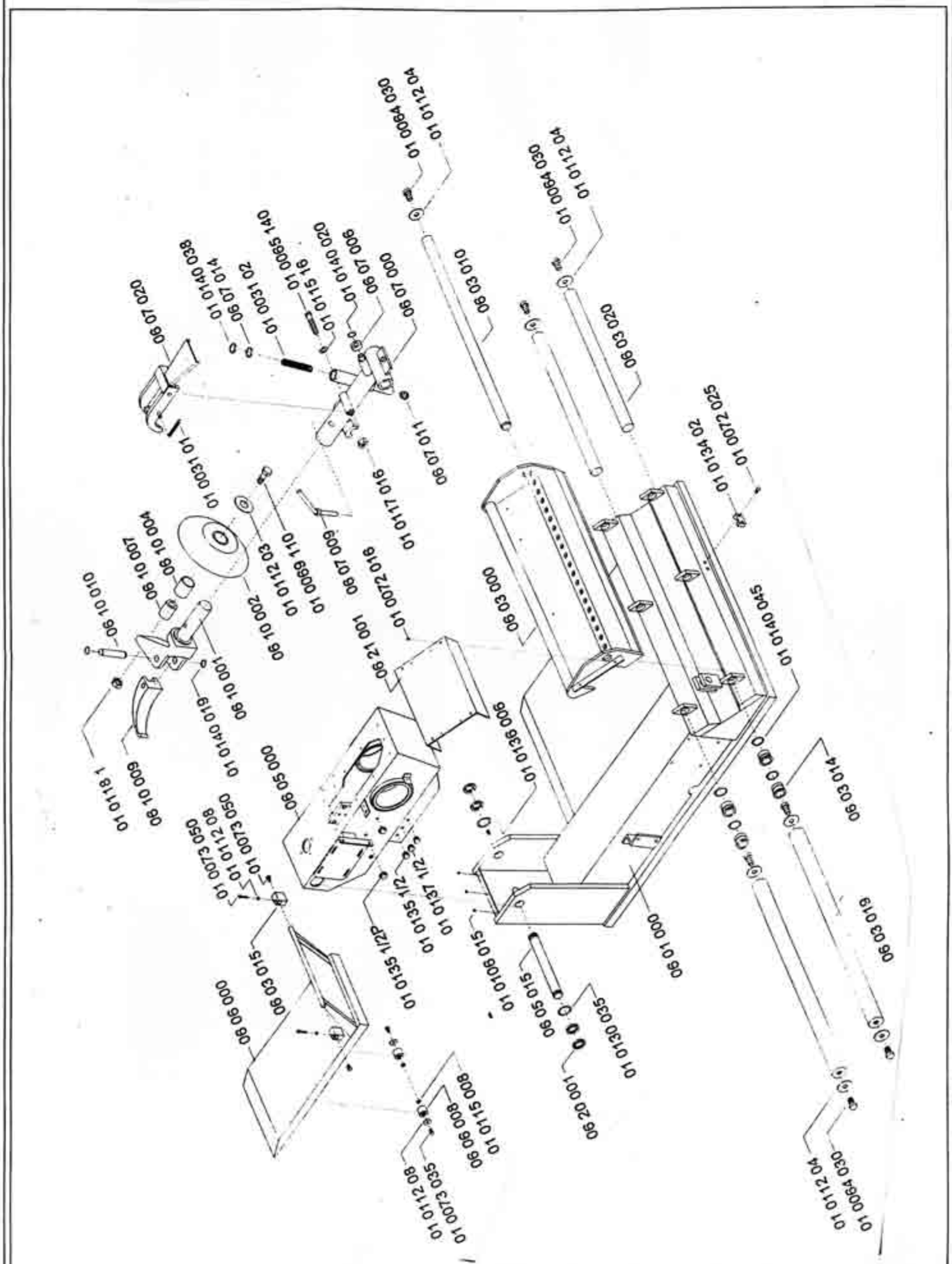
2. Systematically check the oil level in the hydraulic system by means of a depth gauge placed in the oil tank. Producer recommends using the hydraulic oil Shell Tellus Oil 42 or another producer's equivalent having the same viscosity as the indicated oil.

3. Periodically check the oil level in the reducer of the machine chuck. This operation should always be carried out with the lowered working arm of the machine – at a standstill. The oil level should be checked in the peep hole of the motoreducer housing. Producer recommends using the gear oil Shell Omala 680 or another producer's equivalent having the same viscosity as the indicated oil.

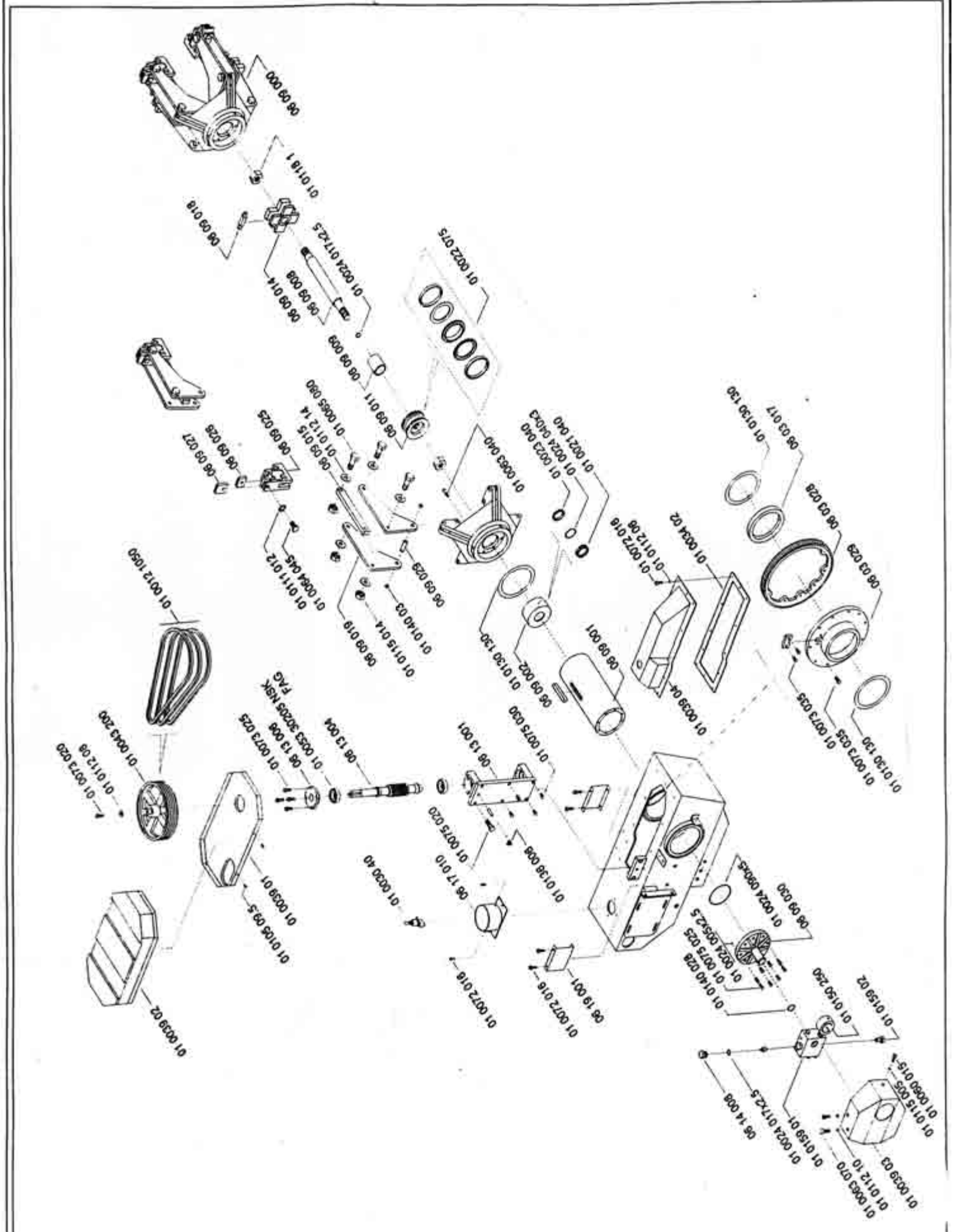
4. Oil tanks are equipped with drain holes. Oil drain follows unscrewing the plug.

Attention: You should dispose of the used oil according to the obligatory regulations.

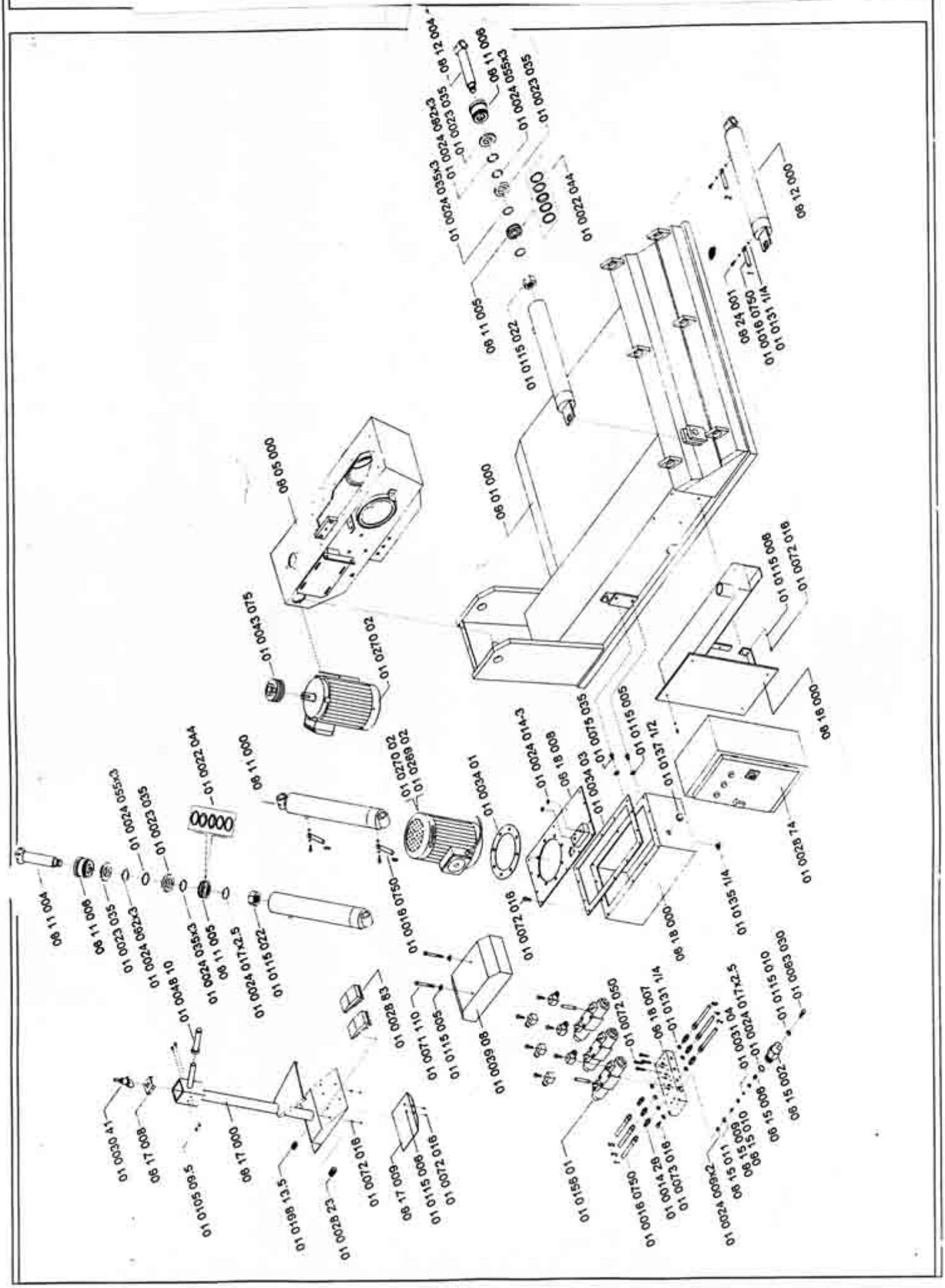
Assembly machine AT 14" – 26" - assembly drawing



Assembly machine AT 14" – 26" - assembly drawing



Assembly machine AT 14" – 26" - assembly drawing



SPARE PARTS LIST		
ITEM NO	ITEM/CODE NUMBER	DESCRIPTION
1	06 01 000	BOTTOM BODY GROUP
2	06 03 000	SLED GROUP
3	06 05 000	GEAR BOX BODY GROUP
4	06 05 015	SUPPORT CONNECTION MILE
5	01 0136 006	GREASER
6	01 0130 035	WASHER
7	06 20 001	KAEM NUT
8	01 0106 015	METAL SCREW
9	06 03 019	BOTTOM BEARING MILE
10	01 0064 030	SCREW
11	01 0112 04	WASHER
12	06 03 014	CARRIER SLED BEEHEVI
13	01 0140 045	MILE SEGMENT
14	06 03 020	TOP BEARING MILE
15	06 03 010	SUPPORT MILE
16	01 0134 02	PIPE CLAMP
17	01 0072 025	CYLINDER HEAD SCREW
18	01 0135 1/2P	BLIND FLANGE (PLASTIC)
19	01 0135 1/2	BLIND FLANGE (PRİNC)
20	01 0137 1/2	LEVEL INDICATOR
21	06 21 001	PISTON TOP LAYER
22	01 0072 016	CYLINDER HEAD SCREW
23	06 06 000	TYRE CARRIER TABLE GROUP
24	06 03 015	HANDLE PIN
25	01 0073 050	CYLINDER HEAD SCREW
26	01 0112 08	WASHER
27	06 06 008	TYRE CARRIER WHEEL
28	01 0115 008	NUT
29	06 07 000	TYRE CHANGER ARM GROUP
30	06 07 006	PULLEY TO SLIDE
31	06 07 011	WEDGE (TEFLON)
32	01 0140 020	MILE SEGMENT
33	01 0115 16	NUT
34	01 0065 140	SCREW
35	01 0117 016	FIBER NUT
36	01 0031 02	LOCKING SPRING
37	06 07 014	SPRING WASHER
38	01 0140 038	HOLE SEGMENT
39	06 07 020	TYRE CHANGER ARM
40	01 0031 01	LOCKING ICREASING SPRING
41	06 07 009	FIXING ARM
42	01 0069 110	SCREW
43	01 0112 03	WASHER
44	06 10 002	CAMPARA
45	06 10 001	TYRE CHANGER OPERATING BODY
46	01 0140 19	MILE SEGMENT
47	06 10 004	BEARING BEEHIVE
48	06 10 007	CONNECTION MILE
49	06 10 010	TYRE CHANGER FOOT CONNECTION MILE
50	06 10 009	TYRE CHANGER FOOT
51	01 0118 1	NUT
52	06 12 000	SLED PISTONE GROUP
53	01 0131 1/4	PRINC WASHER
54	01 0016 0750	HYDRAULIC HOSE
55	06 24 001	CONNECTION SCREW
56	01 0115 022	NUT
57	06 11 005	TYRE HEAD
58	01 0022 044	COMPACT SET
59	01 0024 035x3	O-RİNG
60	01 0023 035	WIPPER
61	01 0024 055x3	O-RİNG
62	01 0024 062x3	O-RİNG
63	06 11 006	PISTONE NUT
64	06 12 004	SLED PISTONE MILE
65	06 11 000	HEAD LIFTING PISTONE GROUP
66	01 0024 017x2.5	O-RİNG
67	06 11 004	HEAD LIFTING PISTONE MILE
68	06 16 000	ACCESSORIES AND ELECTRIC PANEL CONNECTION GROUP
69	01 0115 006	NUT
70	01 0028 74	ELECTRIC PANEL
71	01 0135 1/4	BLIND FLANGE (PRINC)
72	06 18 000	GREASE TANK GROUP
73	01 0115 005	NUT
74	01 0075 035	CYLINDER HEAD SCREW
75	01 0034 03	SEAL

SPARE PARTS LIST		
ITEM NO	ITEM / CODE NUMBER	DESCRIPTION
76	06 18 008	OL TANK UP COVER
77	01 0024 014-3	O-RİNG
78	01 0043 075	ENGINE HOOP
79	06 18 007	OIL TO SCATTER WEDGE
80	01 0072 050	CYLINDER HEAD SCREW
81	01 0014 26	RECCORD
82	01 0073 016	CYLINDER HEAD SCREW
83	01 0270 02	ENGINE 1.5 KW / 2HP – 1400 d/d
	01 0269 02	ENGINE FLANGE (B5)
84	01 0024 009x2	O-RİNG
85	06 15 011	PIN PRESS NEST
86	06 15 009	PRESSURE PIN
87	06 15 010	PIN WEDGE
88	06 15 006	ARC SUPPORT WEDGE
89	06 15 002	PRESSURE ADJUSTMENT VALVE BODY
90	01 0115 010	NUT
91	01 0063 030	SCREW
92	01 0031 04	PRESSURE ADJUSTMENT ARC
93	01 0156 01	HYDRAULIC VALVE
94	01 0039 08	VALVE PROTECTING COVER
95	01 0071 110	CYLINDER HEAD SCREW
96	06 17 000	CONTROL GROUP
97	01 0028 83	PEDAL (PLASTIC)
98	06 17 009	DOWN COVER
99	01 0028 23	KLEMENS
100	01 0198 13.5	CABLE RECCORD (PLASTIC)
101	01 0048 10	HOLD ARM
102	01 0105 09.5	METAL SCREW
103	06 17 008	SWITCH CONNECTION METAL
104	01 0030 41	SWITCH
105	06 09 001	CYLINDER
106	06 09 002	BODY BEARING
107	01 0021 040	NUTRING
108	01 0024 040x3	O-RING
109	01 0023 040	WIPPER
110	01 0130 130	WASHER
111	06 03 011	LOCKING HEAD
112	01 0063 040	SCREW
113	06 09 011	TYRE HEAD
114	01 0022 075	COMPACT SET
115	06 09 009	PISTONE MILE BEEHIVE
116	06 09 008	LOCKING HEAD CYLINDER PISTONE
117	06 09 014	LOCKING CROSS
118	06 09 018	SQUARE PIN
119	06 09 000	LOCKING GROUP
120	06 09 019	LOCKING LAMA
121	06 09 015	SUPPORT LAMA
122	06 09 029	DISTANCE PIN
123	01 0140 03	MILE SEGMENT
124	01 0115 014	NUT
125	01 0112 14	WASHER
126	01 0065 080	SCREW
127	01 0064 045	SCREW
128	01 0111 012	WASHER
129	06 09 025	LOCKING FOOT
130	06 09 026	PRESS SHOE – 1
131	06 09 027	PRESS SHOE – 2
132	06 03 029	TOOTHED CORE
133	06 03 028	ENDLESS SCREW TOOTHED
134	06 03 017	SOLE CONNECTION
135	01 0073 035	CYLINDER HEAD SCREW
136	01 0039 04	GEAR BOX COVER
137	01 0034 02	SEAL
138	01 0112 06	WASHER
139	06 09 030	CYLINDER COVER
140	01 0024 090x5	O-RING
141	01 0024 005x2.5	O-RING
142	01 0075 025	CYLINDER HEAD SCREW
143	01 0140 028	MILE SEGMENT
144	01 0159 01	LOCKING VALVE
145	01 0159 02	LOCKING VALVE PART
146	01 0150 250	MANOMETER
147	06 14 008	COVER SCREW
148	01 0039 03	CLOCK COVER

SPARE PARTS LIST		
ITEM NO	ITEM / CODE NUMBER	DESCRIPTION
149	01 0112 10	WASHER
150	01 0063 070	SCREW
151	01 0060 015	SCREW
152	06 19 001	GEAR BOX CONNECTION METAL COVER
153	06 17 010	SWITCH CONNECTION BEEHIVE
154	01 0030 40	SWITCH
155	06 13 001	CONNECTION SHOE
156	01 0075 030	CYLINDER HEAD SCREW
157	01 0075 020	CYLINDER HEAD SCREW
158	06 13 004	ENDLESS SCREW MILE
159	01 0053 30205 NSK-FAG	BEARING
160	06 13 006	BEARING COVER
161	01 0039 01	HOOP DOWN COVER
162	01 0039 02	HOPP UP COVER
163	01 0043 200	HOOP
164	01 0073 020	CYLINDER HEAD SCREW
165	01 0012 1050	STRAP

Conformity Declaration CE

According to the directives: 98/37/CE and 89/336/CEE

We: Uni-Trol Ltd
Estrady 56
01-932 Warszawa
Poland

Declare on our exclusive responsibility that the product

Assembly machine for lorry wheels – type **AT 14" – 26"**

which is concerned by this declaration, is in conformity with the following legal regulations:

- **directive 98/37/CE (machine safety);**
- **directive 89/33/CEE and the modifications below (electromagnetic compatibility**).

In order to verify the conformity with the legal regulations one consulted the corresponding standards or other standard documents:

– PN – EN 292 – 1/2000	Machines – Safety – Basic notions, general design principles – Basic terminology, methodology – Part 1;
– PN – EN 292 – 2/2000	Machines – Safety – Basic notions, general design principles – Basic terminology, methodology – Part 2;
– PN – EN 50081 – 1/1996	Electromagnetic compatibility – General requirements concerning emission – Commercial, living and light industry environment –Part 1;
– PN – EN 50081 – 2/1996	Electromagnetic compatibility – General requirements concerning emission – Industrial environment –Part 2;
– PN – EN 50082 – 1/1999	Electromagnetic compatibility – General requirements concerning disturbance resistance – Commercial, living and light industry environment –Part 1;
– PN – EN 50082 – 2/1997	Electromagnetic compatibility – General requirements concerning disturbance resistance – Industrial environment –Part 2;
– PN – EN 294 / 1994	Machine safety – Safety distances preventing from reaching dangerous zones with the upper limbs;
– PN – EN 349 / 1999	Machines – Safety – Minimum gaps preventing from crushing the parts of human body;
– PN – EN 60204 – 1/2001	Machine safety – Equipment of electrical machines – Part 1 General requirements
– PN – EN 61204 /2001	D.C. low voltage feeders – Safety requirements and characteristics;
– PN – EN 61293 /2000	Marking of electrical devices with ratings concerning electrical supply - Safety requirements;
– 62/2002	Electrical components
– PN – EN 982 / 1998	Machine safety – Requirements concerning safety of hydraulic and pneumatic systems with their elements – Pneumatics

This declaration concerns all products manufactured according to the technical documentation which is contained in this declaration.

10.04.2004

President of the Management Board

Signature